

# Central Line Associated Blood Stream Infection

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# Blood stream infections from central venous catheters

- Increase mortality risk 25% \$16550/case
- Michigan keystone 103 ICU 7.7 to 1.4 CVC-BSI /1000 CVC-patient-days
- Sustained at 3 years
- NPSA Matching Michigan 2009-11

BMJ QS 20/9/12 10.1136



# Basic Principles

- Reduce urinary catheterisation, intubation
- Enhanced cleaning
- Pre-emptive isolation
- Hospital transfer handover
- Outbreak control + root cause analyses



# Interventions

- Hand hygiene, gown, gloves, hat, mask.
- 2% chlorhexidine in alcohol
- Maximal sterile precautions including full barrier drapes
- Avoid the femoral route
- Aseptic access technique, daily site review, early removal
- Education



# Screening

- Admissions to unit / ICU
- Pre emptively isolate and screen admissions from high incidence units or known carriers
- Weekly screens
- Do not screen staff unless implicated



# Survey 127 UK ICUs

- Microbiology ward round daily 44%, never 13%
- Chlorhexidine bed baths routine 15%
- Antimicrobial CVC 28%, antiseptic 29%
- Chlorhexidine patch 17%
- Chlorhexidine mouthwash 20%

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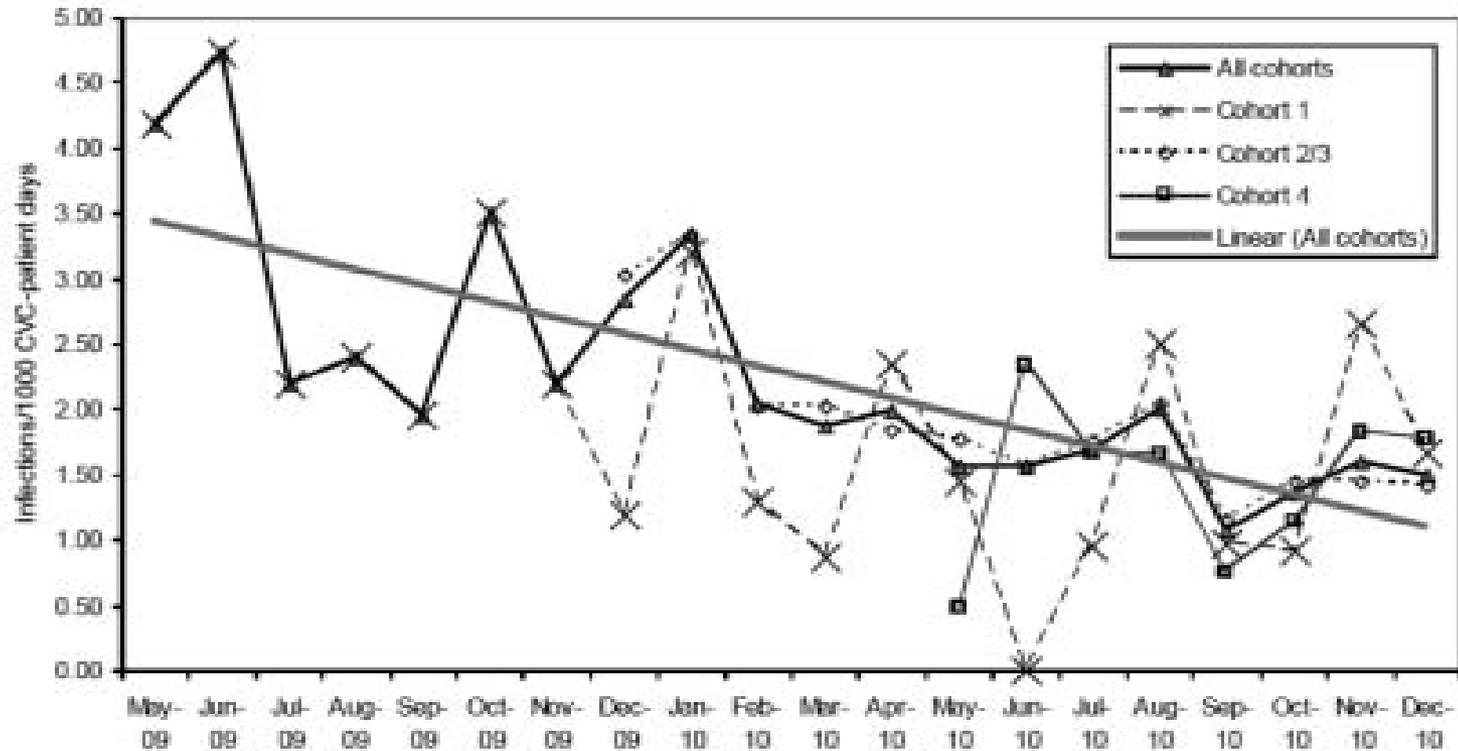
# Matching Michigan

- BSI :  $\geq 1$  pathogens from blood culture or if commensal  $\geq 2$  cultures and fever/chill/hypotension
- CABSI : BSI +  $\geq 1$  CVP within 48h, no other primary site
- CRBSI: BSI +  $\geq 1$  CVP within 48h, one of + tip and blood culture or simultaneous quantitative blood culture



# Matching Michigan: 147 ICUs

d: Adult ICU CVC-BSI rates by Cluster



# Neonatal / Paediatric

- Neonatal Data Analysis Unit, National Neonatal Audit Program, PICANet collect data already
- Neonatal and paediatric community agree single system
- Single indicator and numerator



# Infection in Critical Care Quality Improvement Programme

- Voluntary – all professional groups
- Faculty of ICM, ICS, PICS, ICNARC, NDAU, NNAP, PICAnet, BACCN, BAPM, HIS, IPS, HPA
- Central venous Catheter associated infection



# ICCQIP Survey Feb 2013

- All UK ICU, PICU, NNU
- HIS, IPS, BIA
- General 591, cardiac 68, neurosurgery 38, trauma 10
- Adult 554, neonatal 88, paediatric 76
- Unit beds 11 (7-16)

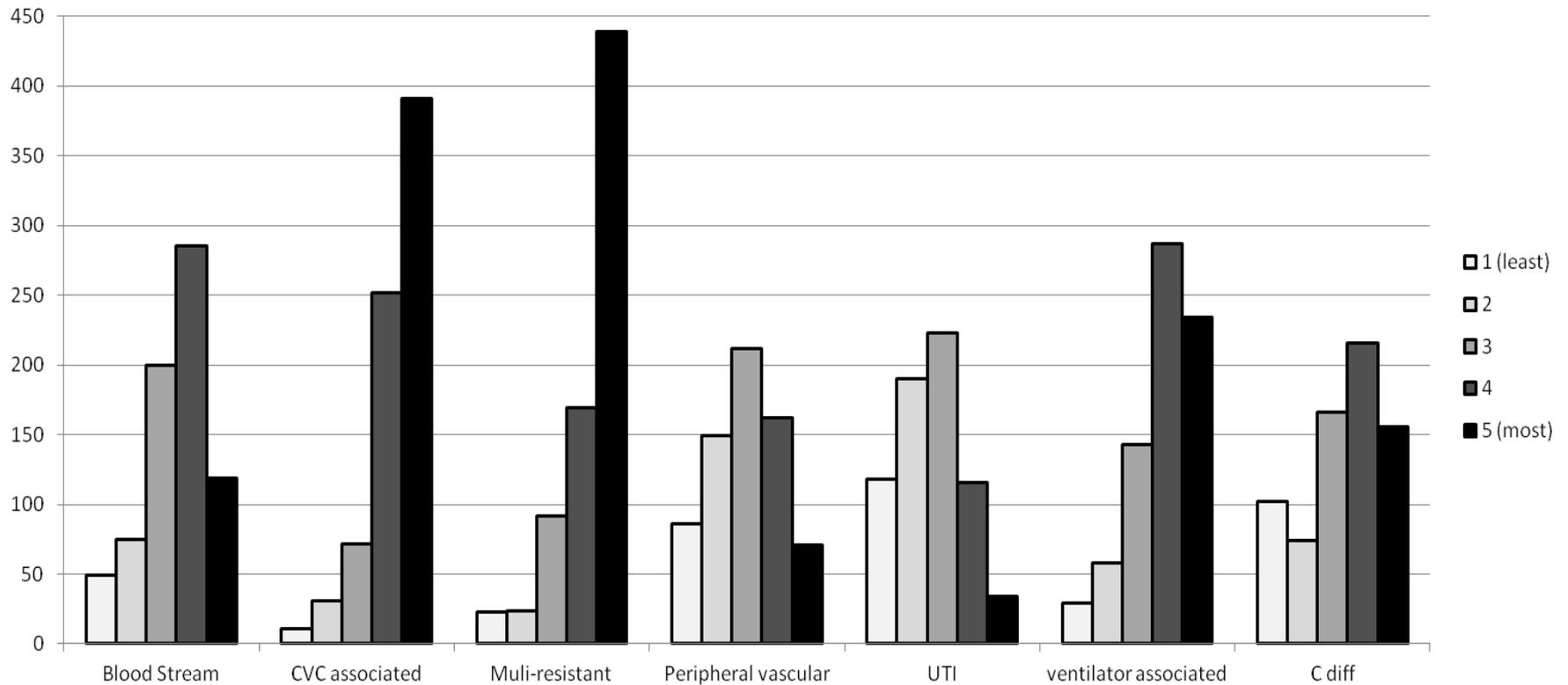


# Survey Response

- 763 replies – 80% ICU physicians, 8% nurses, 5% microbiologists
- 94% agree surveillance required
- 89% agree antimicrobial use data
- 79% agree link to NHS Information systems
- 64% agree should be mandatory



# Survey response



# Actions

- Group working on infection definitions
- Group working on system specification
- Using the PHE Data Capture System
- Process itself monitored as a project with professional collaboration

